Towards the Integration of Statistical Information Systems to Monitor the Sustainable Use of Water Resources

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Pilot environmental surveys on waste and water were run in Romania in the context of approaching Compliance with the European statistical system, and furthermore to support the negotiations in the chapter Environment.

Some initial outcome were presented in a National Conference on the "Development of the Environmental Statistical System in Romania" held in Tulcea (site of the Danube Delta Biosphere Reserve) in May 2004 and the related acts are published on the web site of the Romanian INS (National Statistical Institute http://www.insse.ro/indexe.htm)

The main objective of the direct survey on **water**, whose pilot was conducted for the Mures river basin, was to achieve unitary and coherent data collection on water flow (abstraction, supply, discharge and processing system) from specialized units, industrial units and the agriculture sector.

This was done by means of three different direct surveys:

- Specialized Units performing Water Abstraction and Use & Urban Wastewater Collection, Treatment and Discharge, for public purposes were investigated in an exhaustive manner;
- Industries involved in Water Use and Supply (by means of source) & Wastewater Generation, Collection and Discharge were weighed through stratified sampling;
- Agricultural enterprises performing irrigation were observed on sampling base (but exhaustively for irrigated surface of over 100 hectares).

The pilot project was an interesting *laboratory* and the results of the exercises are going beyond the initial objectives. To enlarge the coverage of the water use in agriculture, specifically in the zootechnical sector, an exercise of estimating the water consumption by different kind of animals was performed applying to the stocks of animal available from the data of the agricultural census and its further updates, coefficients derived by international standards provided by sources such as FAO and ILRI (International Livestock Research Institute).

The entire methodology was conceived to be applied in the future both at river basin level and at NUTS2 regional level.

Future developments, already matter of discussion, are the integration with other important sources towards a complete coverage of the phenomenon including:

- Water precipitation (quantity and rain days)
- Number, localization, storage potential and actual stock (beginning and end of year) of water *reservoire*
- Estimate of water loss (leakage, evaporations …)
- Household Water consumption and waste water generated not-covered by specialized units in the rural areas

Cross analyses with other domain are under investigation such as GDP evolution (and specifically agriculture contribution) against rainfall and variation of stock in the reservoire. Impact of water scarcity also on the energy sector is investigated.

Preliminary evidences suggest as a key indicator, under human management, the total "capacity" of the reservoire; cost-benefit analyses may show the convenience of how much these stocks should be increased to avoid negative impact on agricultural and energetic output in dry years.

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Graduated "summa cum laude" in Economic and Banking Sciences at the University of Siena, G.D'Amore had his Master in Economic Development from the "Tagliacarne" Institute of the Union of Chambers of Commerce, Roma. After four years with a world leader management consulting private firm he moved, in the late 80thies, to the UNDP headquarters in New York, being the first Italian to work at the Division of Management Information Service. In the Statistical domain, before the current engagement, he has been working at the Ghana Statistical Service for UNOPS and at INE Mozambique for the Italian Development Cooperation of MAE. He has also followed European Union funded statistical projects on Not Observed Economy for the Chinese National Statistical Service and the MED countries.

G.D'Amore had a short experience in Mexico being in 1990 visiting professor at post-graduate level at the U.A.B.J.O Universidad Autónoma Benito Juárez of Oaxaca (Maestría en Sociología con Atención al Desarrollo Regional).